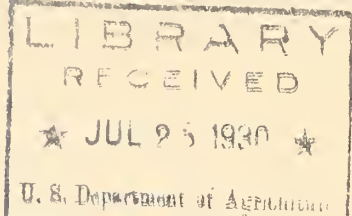


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BEVERAGES



A radio talk by J. W. Sale, Food and Drug Administration, delivered through WRC and 34 other radio stations associated with the National Broadcasting Company, Tuesday, July 15, 1930.

The beverages about which I am going to talk with you today are the manufactured drinks and preparations for making drinks which you buy in the stores. You buy them either bottled ready to drink, or in a form requiring merely the addition of sugar and water to make them into beverages. Of course, the Food and Drug Administration, which enforces the Federal Food and Drugs Act, guards the purity of these manufactured beverages and beverage preparations. It is my purpose today to tell you about some of the things we have to consider in seeing to it that these food products, which are largely consumed by your children, are fit to drink.

That's quite a task. It is estimated that more than 11 billion -- 11 thousand million -- bottles of non-alcoholic beverages are consumed in the United States each year. Into these beverages go 250,000 tons of sugar, five million pounds of fruit acid, 50,000 pounds of artificial color, a million gallons of flavoring extract, and 400 million gallons of carbonated water.

We have found that practically all non-alcoholic beverages belonging to the soft drink class consist of sugar sirup, acidulated with acid, carbonated water, and small quantities of other ingredients designed to make the drink pleasing to sight, smell, and taste. Usually the sweetener is cane or beet sugar. Fruit acids are the common acidulants. By fruit acids I mean such as citric acid, made from lemons or, by a biological process, from sugars. The carbonated or effervescent water which comprises a large proportion of the beverages, is water impregnated with pure carbon dioxide. The carbondioxide gives a pleasant, sharp taste to the beverage, and the bubbles of gas, rising through the liquid, give an attractive appearance.

Soft drinks are almost universally colored. The colors are the so-called certified dyes, harmless, and suitable for use in beverages and other food. You may be interested in knowing that the ordinary 7-fluid ounce bottle of artificially colored soda contains only about three-hundredths of a grain of added coloring matter.

Many and varied are the flavoring substances used in beverages. Many are extracts of aromatic substances derived from various parts of plants. Cloves and chamomile, for example are buds or flowers of plants; vanilla beans and citrus fruit peel are fruits or parts of fruits of plants which yield flavoring substances. Seeds, roots, barks, stems and leaves of various plants furnish still other flavors. Fruit juices also are used. Then there are the synthetic flavors -- esters and higher aldehydes and alcohols.

(over)

The "stimulant" type of beverage contains caffeine which is either added as such or in the form of cocoa, tea, or coffee. When caffeine is added as such the amount is usually five-tenths of a grain, or less, per bottle or glass. Coffee and tea, of course, contain several times this quantity of caffeine. Many of you do not wish your children to consume beverages containing caffeine. The Food and Drug Administration believes that you have a right under the Federal Food and Drugs Act to know from the labels whether or not a beverage contains added caffeine.

What I have been saying about composition of beverages applies to the bottled soft drinks. The ingredients I have mentioned to you are present in highly concentrated form in the beverage preparations; water and sugar is left out of these preparations, since the directions call for the addition of these constituents by the user. It is often necessary to substitute some solvent such as glycerin, alcohol, etc., to hold the flavoring principles in solution.

Now, I have outlined for you the composition of these soft drinks, the drinks which go down the American gullet at the rate of 11 billion bottles annually. This description was necessary to acquaint you with the work of the Food and Drug Administration in preventing adulteration or misbranding of the beverages you and your children drink. I had better also define "adulteration" and "misbranding." Under the food and drugs act "adulteration" of beverages means organic or inorganic contamination rendering the drink harmful to health. "Misbranding" means misrepresentation in the labelling on the bottle or package of the composition of the beverage.

Very well, then, what do we have to look out for in the way of adulteration of beverages?

The adulteration of beverages consists ordinarily either in the incorporation of filth through the medium of polluted water or sirup, dirty bottles or dirty crown caps, or the presence of metallic impurities or other added harmful ingredients. Whether or not a beverage is polluted and therefore unfit for human consumption can usually be determined only by an examination by a competent bacteriologist. Owing to the fact that in recent years bottle washing machinery and other equipment for the sanitary production of bottled beverages have been brought to a high degree of perfection, and to the fact that rigid control is exercised by State and city food officials over the quality of water used for food manufacturing purposes, commercial bottled beverages are now very generally found to be of a high degree of purity.

A few years ago we found 3.3 grains of zinc chloride in a 15-ounce bottle of root beer which had caused severe vomiting. However, instances of such gross contamination with metallic impurities in the beverage industry are rare.

There are a number of ingredients which are regarded as wholly unfit for use in food beverages and when they are found to be present the beverages containing them are subject to formal action under the terms of the law. Some of these ingredients are saccharin, salicylic and boric acids and formaldehyde, hydrogen peroxide, nitrobenzol, and uncertified dyes which are either harmful in themselves or contain harmful ingredients. Saccharin is the sweet chemical

derived from coal tar, and has no food value. It may be sold as a drug but has no place in food products shipped within the jurisdiction of the Federal food and drugs act, even though its presence is declared in the labeling. Salicylic and boric acids, formaldehyde and peroxide are sometimes employed as preservatives but food found to contain them in any proportion is immediately proceeded against under the terms of the law. Nitrobenzol is a chemical which was formerly used as a flavoring ingredient of beverages. However, it is unfit for such use because of its toxicity and has been only rarely used in beverages since the passage of the food and drugs act. Space does not permit describing other harmful constituents which from time to time are used in beverages. You may rest assured, however, that the Food and Drug Administration is making every effort to protect you by keeping undesirable ingredients out of not only beverages but also other foods.

Probably the chief form of misbranding indulged in by manufacturers of beverages and beverage preparations is to label these products in such a way as to convey the impression that they contain more fruit or fruit juice than is actually present in them. For example, fruitades such as orangeade, lemonade, etc., are held to be beverages consisting of fruit juice, sugar and water. Therefore, if products labeled as fruitades are encountered and are found not to owe their fruity character to fruit juice but merely to fruit extracts, they are held to be misbranded. Other important grounds for action because of misbranding are the presence of undeclared harmless preservatives or undeclared harmless artificial color, and undeclared added fruit acid.

In many instances, the manufacturer who finds his beverages or beverage concentrates misbranded under the act, will elect to change his manufacturing formulas by incorporating in his products larger quantities of actual fruit juice, rather than to label his products as imitations. One of the interesting results of our strict enforcement of the Federal food and drugs act with respect to representations of fruit content in the labeling of beverages has been a greatly increased utilization of fruits that heretofore have been allowed to go to waste because they are too ripe to ship or are of a size unsuitable for shipment as fresh fruit, although in perfectly edible condition. One manufacturer conducting a world-wide business in a beverage sirup, who formerly flavored his product with essential oils now incorporates actual fruit juices in it. He now buys \$100,000 worth of orange juice each year, whereas, previously, his beverage sirup was flavored entirely with extracts of essential oils.

If you would like to know something more about the composition of beverages than I have been able to tell you in the limited amount of time allotted to me, we shall be glad to send you on request a mimeographed article entitled "Present Day Beverages from a Health Standpoint." Just address your request for this publication to the U. S. Department of Agriculture, Washington, D. C., or to the station to which you are listening.

Thank you. Good afternoon.
